

## **Attachment 7 – Program Preferences**

There are five projects included in this application, so this section has been limited to five pages. However, this attachment has been organized by Human Right to Water and Program Preference sections, with an explanation of how any applicable project addresses each section. The Attachment was organized this way in order to condense the attachment and help reduce redundant explanations for similar projects. A table identifying the Program Preferences and Statewide Priorities that each project addresses is included.

### **Human Right to Water (Current and Past Efforts)**

- The Authority has actively worked to ensure DACs inclusion within the planning process. The formation of the Authority includes provisions for DACs to have official involvement through the Advisory Committee.
- The Kings IRWMP includes a specific chapter (Chapter 4) that is focused on Disadvantaged communities (DACs) and their general needs. DACs are prevalent in the Kings Basin and have many critical water supply and water quality needs. Specific topics that are discussed include: Important Cultural/Social Values of the Region, Tribal Government Involvement and Collaboration, Economic Conditions/Trends of the Region, DACs within the Region, Kings Basin DAC Pilot Study, and DAC Goals.
- The Kings IRWMP also includes a specific Measurable Objective (MO) focused on the issues facing DACs. MO3 is to “Identify DAC priority needs and promote/support solutions to DAC water issues”.
- The Authority has actively worked to ensure DACs inclusion within the planning process. The very formation of the Authority includes provisions for DACs to have direct and official involvement through the formation of the Advisory Committee.
- In partnership with DWR, the KBWA prepared the Kings Basin Disadvantaged Communities Pilot Project Study (KBWA DAC Study) to develop an inventory of the Disadvantaged Communities within the Kings Basin Region (portions of Fresno, Tulare and Kings Counties) and learn how to better integrate and engage the DACs in the IRWM planning process. The final study was completed in July 2013. The objectives of the Study included: Develop a comprehensive inventory of all disadvantaged communities and their water-related needs, initiate first-time intentional outreach to all identified DACs, and integrate contact information into the Kings Basin IRWMP mailing lists; Engage and integrate DACs effectively into the Kings Basin IRWMP by developing Subregion groups to conduct regional water planning to address priority DAC needs; and Develop conceptual project descriptions and cost estimates to include in the Kings Basin IRWMP project list, and facilitate partnerships between DACs, IRWMP Members and Interested Parties.
- The KBWA DAC Study resulted in five Pilot Project Reports, which helped 12 communities and involved more than 40 DACs. The KBWA DAC Study identified 38 potential projects, developed five into ‘Pilot Projects’ and prepared reports for each. The KBWA DAC Study divided the KBWA IRWMP boundary into five Subregions. Within each Subregion a matrix was developed to identify potential opportunities. From these potential opportunities, the Subregion stakeholders identified the most critical opportunity and a Pilot Project Report was developed for it, including preliminary engineering analysis, cost estimates and next steps to continue development of the project. The DAC Workgroup held meetings to identify challenges and seek methods to improve preparation/submission of DAC projects in grant applications.
- The KBWA DAC Study also provided recommendations on how other regional groups may be successful at approaching and engaging DACs in the IRWMP process. Some of the recommendations developed included staffing a Regional DAC Coordinator; using non-government organizations or community-based organizations for outreach and DAC contacts; providing technical and/or financial support for DACs to prepare funding applications; considering DAC characteristics when reviewing funding applications; including an inventory of private well communities in the scoping of future DAC studies; use non-email forms of communication to DACs; conduct pre-application and grant application workshops or trainings.
- KBWA includes a DAC Workgroup, focused on DAC related concerns and has prepared specific outreach to DAC communities related to involvement with the IRWM process (see **Attachment 7a**).
- Many DACs in the Kings Basin Region have a long history of water quality violations for a variety of causes including nitrate, uranium, arsenic, volatile organics and of other constituents. The contamination in many DACs is so extreme that the communities are, at times, issued “boil water” and “do not drink” orders requiring the use of bottled water exclusively for consumption purposes, placing an increased burden on household incomes.

- Water quality contaminants in rural DACs and Severely Disadvantaged Communities (SDACs) originate from a variety of sources. Some are naturally occurring, such as arsenic or uranium; other contaminants are related to land use including point source and nonpoint source discharges from industrial, commercial, agriculture, and human wastes. The potential solutions are as varied as the contamination sources, and are difficult to standardize across multiple communities due to variables such as geographic location, local hydrologic conditions and chemistry, water system size, water source, and local preference. Solutions often include: drilling new or deeper wells, modifying existing wells to access different parts of the aquifer, treatment facilities including blending, and consolidation in a variety of forms.
- The KBWA has also been actively involved in Disadvantaged Community Water Study for the Tulare Lake Basin, a study conducted by a partnership with the Department of Water Resources (DWR) and the County of Tulare to develop an integrated water quality and wastewater treatment program plan to address the drinking water and wastewater needs of disadvantaged communities in the Tulare Lake Basin.
- To facilitate inclusion of the East Orosi CSD and Sultana CSD projects in this application, CID, City of Fresno and FMFCD are covering costs beyond what East Orosi and Sultana can afford for application preparation.

### Human Right to Water (Projects in this Application)

This application includes projects that assist in meeting the Human Right to Water goals. All of the projects will provide benefits that help make water supply more affordable by sustaining the local aquifer and delaying capital improvements and the rate increases required to fund those project. The following describes those projects and how the proposed projects will help accomplish these goals:

- The East Orosi CSD project will provide needed water conservation to a Severely Disadvantaged Community (SDAC) that has limited available supply on a system that has one well. Meter installation is required by Assembly Bill 2572 and without funding; the impoverished community will face rate increases.
- The Sultana CSD project will also provide needed water conservation to a SDAC that has limited available supply. Similar to the East Orosi project, water conservation from the meter installation will sustain the aquifer that serves the community, and grant funding will cover the cost of the required meter installation instead of increasing water rates for the impoverished community members.
- This project will meet the critical water supply and water quality needs of the City of Parlier, a DAC, by providing needed groundwater recharge to help sustain the aquifer that they are dependent upon. The project will provide improvements to assure continued reliability of minimum quality and quantity of water. As the City of Parlier relies solely on groundwater, the project provides a direct benefit to the groundwater supply, quality and levels, and groundwater sustainability of the area.
- Similar to the CID project, the City of Fresno and FMFCD will provide needed groundwater recharge to sustain the aquifer that the community is dependent upon, delaying needed rate increases. The system interties will provide groundwater recharge to areas within the City of Fresno that are considered disadvantaged per their median household income (see Attachment 8).

### Program Preferences

Project Proponent	HUMAN RIGHT TO WATER	Program Preferences							Statewide Priorities							
		Regional Project or Program	Integrate WMPs and Projects w/in Hydrologic Region	Effectively Resolve Water-Related Conflicts w/in or Between Regions	Contribute to Objectives of CALFED Bay-Delta Program	Address Critical Water Supply or Quality Needs of DACs	Integrate Water Management w/ Land Use Planning	Help Reduce reliance on Delta	Drought Preparedness	Use & Reuse Water More Efficiently	Climate Change Response Actions	Expand Environmental Stewardship	Practice Integrated Flood Management	Protect Surface Water & GW Quality	Improve Tribal Water & Natural Resources	Equitable Distribution of Benefits
CID	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X
City of Fresno	X	X	X	X	X		X	X	X	X	X	X	X	X		X
FMFCD	X	X	X	X	X		X	X	X	X	X	X	X	X		X
East Orosi CSD	X		X	X		X			X	X	X	X				X
Sultana CSD	X		X	X		X			X	X	X	X				X

**Regional Project or Programs**

The CID Adams & Academy Basin Project would create a new water supply, averaging 1,320 AF/year that would be available on the market for water agencies within the Kings River region. CID would not be the only beneficiary of this new water supply. Water transfers and sales would likely occur between CID and other irrigation agencies in the Kings Basin. The City of Fresno Nielsen Groundwater Recharge Project and the FMFCD Regional Groundwater Recharge Project are part of a more than 40-year regional groundwater recharge effort in the area to replenish the groundwater aquifer. In addition to dedicated recharge basins, the City of Fresno and FMFCD, together with the Fresno Irrigation District (FID), have developed a program to utilize FMFCD stormwater basins for groundwater recharge during the summer months. A system of interties has been constructed to connect FID conveyance facilities with the FMFCD basins and storm drain pipelines. Through an agreement with FID, the City of Fresno has surface water from the Kings and San Joaquin Rivers delivered by FID to FMFCD basins for groundwater recharge. The two agencies installing water meters, East Orosi CSD and Sultan CSD, are considering jointly purchasing meters in bulk to reduce costs. This collaborative effort essentially creates a regional water meter project that involves multiple agencies and spreads benefits throughout the Kings Basin.

**Integrate water management programs within a hydrologic region**

The Kings Basin IRWMP covers the area of the Kings Groundwater Sub-basin, which is defined by the California Department of Water Resources as a distinct hydrologic region. All of the proposed project fall in this region and all will benefit the Kings Basin. Each of the proposed projects has benefits to groundwater overdraft either through groundwater recharge, groundwater banking, or reduced pumping from water conservation. Groundwater overdraft has been identified as one of the principal problem in the Kings Basin and the IRWMP set a goal of eliminating the overdraft in 20 years. The five proposed projects will mitigate overdraft by more than 6,600 AF/year, and make a significant contribution towards improving groundwater conditions in the hydrologic region.

**Effectively resolve significant conflicts within or between regions**

The Kings Basin has been in a state of overdraft for many years. The region relies on surface water and groundwater, but surface supplies are limited and groundwater demand exceeds the safe yield. Average annual overdraft in the Kings Groundwater is estimated to be 120,000 to 150,000 AF. This has caused conflicts among water users for many years. In a region of groundwater overdraft, any reduction in groundwater pumping is a positive step toward resolving water-related conflicts. The two water meter projects will each conserve water and reduce groundwater overdraft. The three recharge projects will both recharge significant volumes of water and help mitigate groundwater overdraft. The CID includes banking and subsequent recovery that will make every year (even dry-year) supply available which should help reduce conflict for water especially in dry years.

**Contribute to CAL-FED Bay-Delta Program Objectives**

The CID, City of Fresno and FMFCD recharge projects will make a minor contribution to improving levee integrity in the Delta. The projects will divert Kings River floodwater that has historically flowed past the James Bypass. These waters have entered the San Joaquin River and flowed to the Delta. By diverting these waters, flood flows and flood water levels will be lower in the Delta, thus reducing the risk of levee failures.

**Critical Water Supply and Needs for DACs**

East Orosi has two active wells that produce approximately 250gpm and both regularly exceed the MCL for nitrate. The proposed project will addresses the critical water supply and water quality needs of this disadvantaged community by reducing the demand from this well, sustaining its usable life and helping assure that the critical water supply for this community. Sultana CSD relies on one well as its sole source for water. A second backup well exists, but it produces water that exceeds the MCL for DBCP and is just barely under the MCL for nitrate. The project will addresses the critical water supply and water quality needs of this DAC by reducing the demand from this well, sustaining its usable life and helping assure that the critical water supply pumped from Sultana CSD's potable well will be available to its residents by conserving water for current and future generations. As noted in Attachment 2, water conservation measures are critical as wells just a few miles away are going dry. It is also important to note that funding from this program is one of the few, if not only available funding programs for water conservation efforts such as this for these communities. And these projects will help ensure the Human Right to Water goals for these communities.

### **Integrate water management programs with land use planning**

All regional projects involving the Kings Basin Water Authority are developed to meet established urban and metropolitan water management plan objectives. These water management plans are consistent with the goals of the California Water Plan and several other statewide and regional plans. Most local land use plans include water conservation components including guidelines and requirements. The recharge at the CID's recharge project is part of a cooperative agreement between the City of Parlier and CID (**Attachment 7b**) to provide mitigation for increased groundwater pumping caused by existing and planned urban development within the City of Parlier. The same is true of the City of Fresno's and FMFCD's recharge projects. The two water meter projects (East Oroquieta and Sultana) effectively integrate water management with land use planning. Conservation is also critical to allow the limited water supply to meet the demands associated with existing land use plans.

## **Statewide Priorities**

### **Drought Preparedness**

The Kings Groundwater Basin practices conjunctive use by necessity. Surface water supplies cannot meet all demands even in normal water years. Surface water storage is very limited in droughts and the groundwater aquifer must be tapped to prevent crop losses and ensure adequate water for municipalities. Mitigating groundwater overdraft is important to help ensure there are adequate groundwater reserves in prolonged droughts.

CID's Adams & Academy Banking Project will recharge, on average, approximately 2,268 AF/year. This water will be stored and available for pumping in dry years. The City of Fresno's Nielsen Groundwater Recharge Project will recharge, on average, 1,876 AF/year and increase groundwater reserves that can be pumped by City wells in dry years. FMFCD's Groundwater Recharge Project will recharge, on average, 2,390 AF/year. The two water meter projects (East Oroquieta and San Joaquin) will each reduce groundwater pumping and increase groundwater reserves. Through the installation of meters, and by utilizing volumetric billing rates, water demands are expected to decrease by 20%. This will also provide an extra supply that can be tapped in dry years and protect the local economies. Overall, the five projects will increase groundwater reserves by an estimated 6,600 AF/year. This water will be available in dry years, as well as reduced water allocation periods due to environmental concerns.

### **Use and Reuse Water More Efficiently**

The two proposed water meter projects will provide incentives for water users to conserve water. Water will be billed on a volumetric rate and consequently water usage is expected to decrease by 20%. This will result in more efficient use of urban water supplies. The City of Fresno and FMFCD recharge projects will recharge Kings River floodwater that would normally leave the Kings Basin and ultimately flow to the Delta or ocean. This will provide a more efficient use of local water resources. CID's Adams & Academy Groundwater Banking Project will recharge on average 2,268 AF/year. This will include Kings River floodwater that typically flows out of the area and Kings River Fish flows that are available in certain times of the year when demands are low. As a result, the project will capture and reuse waters that would otherwise be lost to the region.

### **Climate Change Response Action**

Climate change in the Kings Basin could result in earlier snowmelt, more rain on snow events, more flood releases, and higher peak flows on the Kings River. As a result, the region may see earlier and more frequent flood releases. The three recharge projects will both capture Kings River floodwater and help to adapt to these changes. Climate change could also result in changes in the seasonality of precipitation, less reliable water supplies, and changes in temperatures and cloud cover that inhibit local cloud seeding operations. These could all result in more frequent droughts. The water conservation, groundwater recharge and groundwater banking components of the projects will improve resiliency and help to adapt to climate change induced droughts.

The proposed projects will also help to reduce greenhouse gas emissions. The CID, City of Fresno and FMFCD projects will raise groundwater levels, and are expected to reduce CO<sub>2</sub> emissions. The two water meter projects will reduce water demands by 20%, which will reduce energy demands and greenhouse gas emissions by 20%. The Kings Basin IRWMP identifies several strategies for adapting to climate change. Some of these strategies include: 1) Improve water use efficiency, 2) Encourage conservation, 3) Develop groundwater recharge and banking projects, and 4) Increase ability to capture floodwater. The five proposed projects are consistent with these strategies.

### **Expand Environmental Stewardship**

The CID project will allow for continue to provide flows for the Kings River Fisheries Management Program from its stored surface water supply, then recharge and later use those banked supplies. The CID and City of Fresno recharge basin projects will create more than 60 acres combined temporary habitat for a variety of wildlife. The FMFCD project will extend the period in which water is ponded at more than 75 acres. Benefits will include:

- Creation of waterfowl, upland, wetland and aquatic habitat; resting, roosting, nesting, drinking, and foraging habitat for waterfowl, shorebirds, resident and migratory birds and a variety of other wildlife,
- Waterfowl habitat for bird species on the Pacific flyway and terrestrial wildlife,
- Varying water depths that provide a variety of habitat environments for different species including foraging areas for waterfowl, shorebirds, and other wildlife,
- Reduction in fugitive dust and pesticide applications from changing the land use from agriculture to recharge basins.
- The CID and City of Fresno projects will also include interior levee slopes will be as much as 5H: 1V, which will promote the growth of native wetland and upland vegetation to provide wildlife habitat. The interior levee for the settling channel will provide semi-isolated habitat and safer conditions from predation. These two projects will significantly improve habitat for wildlife in the area.
- All five projects will reduce groundwater demands or mitigate groundwater overdraft. This could help reduce demands on surface water and promote environmental stewardship.

### **Practice Integrated Flood Management**

CID's Adams & Academy project will divert Kings River floodwater, as well as urban stormwater, for part of its water supplies. Total water diversions are estimated to average 2,268 AF/year. In very wet years, the amount diverted could total more than 6,000AF. This will make a significant contribution towards flood control on the Kings River, and control urban stormwater in the Fresno metropolitan area. The City of Fresno Nielsen Project will also provide another location for up to 30cfs of floodwater to be diverted. Average annual floodwater diversions are estimated to be 1,876 AF. These projects will also reduce water levels and peak flows on the Kings River during flood periods, and thereby potentially reduce flood damage. The FMFCD project integrates existing flood management basins with surface water conveyance systems to provide groundwater recharge.

### **Protect Surface Water and Groundwater Quality**

The three recharge projects will recharge high quality Kings River water in an area with known groundwater quality problems including elevated levels of nitrates and arsenic. Recent water quality data shows that Kings River water has superior quality, while the groundwater often exceeds the maximum contaminant levels (MCLs) for drinking water standards. Through blending and dilution the groundwater quality is expected to improve.

### **Ensure Equitable Distribution of Benefits**

This grant application includes projects for two DACs: East Oroshi CSD and Sultana CSD, as well as the City of Parlier and area surround CID's project. Portions of the City of Fresno also meet the definition of disadvantaged, and will benefit from the groundwater recharge that occurs at basins in those areas. The Kings Basin Water Authority has made it a priority to include and encourage the participation of small unincorporated DACs with the IRWM process. East Oroshi CSD and Sultana CSD projects will provide water meters that will help conserve water supply in disadvantaged communities that rely on 1 and 2 wells respectively that are at or exceeding MCL violations. If these projects are funded through this grant, the funding will reduce the financial burden placed on the local water customers to pay for the meters. The five proposed project are spread throughout the IRWMP area, helping to ensure that benefits are distributed geographically.